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## **DIRECTORIES OF BUSINESS ESTABLISHMENTS**

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## **Introduction**

Establishment directories are elements of a country's statistical infrastructure that can be used to generate samples for the purpose of gaining a detailed knowledge about topics of particular interest. They also provide information on the basic characteristics of the economic units they encompass.

Two questions arise from this: (i) How is a directory of establishments constructed? (ii) How is it kept up to date?

This document provides possible answers to these questions.

### **1. The initial list**

In Mexico there are two data sources that can be used to construct directories, namely compulsory administrative records and the economic censuses carried out every five years.

The administrative records that all establishments are required to maintain, which in principle could be used to compile establishment directories, suffer from a number of coverage problems. As a result, surveys that obtain samples from this type of directory can be expected to generate underestimates.

It is therefore advisable to use economic censuses as a basic data source when compiling the initial list of establishments. The main characteristics of this census project are described below.

Economic censuses in Mexico garner information from all economic units, covering industry (manufacturing, mining, oil drilling and electric power), commerce, services (financial and non-financial), transport and communications, fishing and construction, together with activities of water capture, treatment and distribution.

#### *1.1 Background*

Altogether 15 economic census surveys have been carried out between 1930 and 1999. In 1930, information was obtained from 48,500 establishments engaged exclusively in manufacturing industry. Since then, other sectors have been incorporated, starting with the second census survey in 1935. The most recent census in 1999 collected data from about 3 million economic units distributed across nine sectors.

#### *1.2 Geographic coverage*

The 1999 economic censuses were conducted in all urban areas of the country, covering a total of 2,443 municipal units and 1,388 localities with populations of at least 2,500 inhabitants. The censuses also covered 381 industrial parks, cities and corridors.

In the remainder of the country, consisting of rural areas, information was gathered via a sampling system, which in this case included 37,179 localities, each with a population of under 2,500 inhabitants.

### *1.3 Field work*

The field work for the 1999 economic census exercise was divided into two stages: integer numeration and the census survey itself.

Integer numeration was carried out from March to November 1998 in order to identify, locate, classify and record economic units in a census schedule. Once this stage was completed, directories were compiled to enable census questionnaires to be assigned in accordance with each economic unit's activity sector. This also made it possible to plan human, material and financial resources for the census survey itself. This survey stage entails visiting every urban block in the country and asking questions in each household to determine whether economic units, registered or otherwise, operate there.

In accordance with the planning of this project, the census survey in urban areas was carried out between November 1998 and April 1999. During this period, economic data was obtained from each establishment, using the questionnaires appropriate to its main activity. In rural areas, data collection took place between May and July 1999.

### *1.4 Consultation with users*

A series of consultations were held with internal users and external users separately, in order to generate basic statistics on the Mexican economy to meet stated needs.

Meetings were also held in INEGI to garner opinions and suggestions from other areas of the Institute that make use of economic census data for a variety of purposes, such as sample frameworks, derived statistics and specific studies.

In addition, meetings were held to consult current information needs and to give users and informants from the public, private, social and academic sectors the chance to express opinions on the contents of the census questionnaires. Representatives and leaders of chambers, associations and representative bodies from all economic sectors covered by the census were invited to these events, along with representatives from the public and academic sectors. Seven meetings were held altogether, attended by representatives from 74 private-sector, 63 public and 19 academic institutions. All submissions were analysed and, subject to verification of viability, they were included in the census questionnaire.

### *1.5 Differentiated questionnaires*

In order to ensure simple and efficient capture of economic variables reflecting the general operation of every economic establishment in the country, 34 different questionnaires were designed containing questions in common and others specific to each activity.

### *1.6 Sectoral coverage*

Historically speaking, the 1999 economic censuses covered the widest range of economic activities (excluding agricultural and forestry activities) ever surveyed in Mexico. The only activities excluded were collective taxis, public administration and defence, political organizations and international bodies.

The following census surveys were conducted in 1999:

- Fourth fishing census
- Twenty-fifth industrial census
  - Mining and oil drilling
  - Manufacturing industry
  - Electric power generation, transmission and distribution
  - Construction industry
- First census of water capture, treatment and distribution
- Twelfth commercial census
- Thirteenth census of transport and communications
- Twelfth census of services
  - Financial services
  - Real estate services and property rental
  - Technical, professional, personal and social services

In 1999, data was obtained for the first time on water capture, treatment and distribution, and on educational, medical and social welfare services provided by the public sector.

### *1.7 Observation units*

Given the characteristics and nature of the different economic activities, and the mobility and organizational forms under which they operate, a decision has to be made as to the statistical units on which it is practical, useful and feasible to obtain data.

Different observation units were used for each activity sector, as shown in the following table:

<u>Sector</u>	<u>Observation units</u>
1. Fishing	<ul style="list-style-type: none"> <li>- Fishery unit.</li> </ul>
2. Mining and oil drilling	<ul style="list-style-type: none"> <li>- Mining unit (for coal mining, and metallic and non-metallic mining).</li> <li>- District of exploitation (for oil drilling and natural gas).</li> </ul>
3. Manufacturing industry	<ul style="list-style-type: none"> <li>- Establishment</li> <li>- Homogeneous production unit (for certain types of establishment).</li> <li>- Freight transport company (for the transport of petrochemicals and refined oil).</li> <li>- Work centre (for basic petrochemicals and oil refining).</li> </ul>
4. Electricity and water	<ul style="list-style-type: none"> <li>- Federal firm-entity (for the electric power industry).</li> <li>- Operating agency (for water capture, treatment and distribution).</li> </ul>

- 5. Construction - Construction company.
- 6. Commerce - Establishment
- 7. Transport and communications
  - Transport company (for different types of transport: rail, electric, self-transport of passenger cargo, by water and air).
  - Federal firm-entity (for the following communications services: mail, traditional telephony and telecommunications).
  - Establishment (for foreign and local messaging services, cellular telephony and phone boxes).
- 8. Financial services, real-estate and property rental
  - Firm (for financial services).
  - lishment (for real-estate services and property rental).
- 9. Technical, professional, personal and social services
  - Establishment.
  - Bridge or booth (for motorway services, bridges and similar items in road transport).
  - ated port administration (for port administration services, quays and similar items).
  - al firm-entity (for services related to air transport).

The definition of each observation unit is given below:

*Fishery unit:* Economic unit engaged in the capture or extraction of aquatic species, or the cultivation of fauna in aquaculture farms for commercial or development purposes, in the sea, rivers, lakes, lagoons, ponds, estuaries, dams, aquatic tanks, enclosures, under the auspices of a single proprietary or controlling body. The latter may consist of a single person or a group (e.g. firm, association, union), which possesses the materials needed for this activity (boats, tackle, equipment and fishing implements), which may or may not be owned by them. This definition excludes fishing for own consumption and sporting purposes.

*Mining unit:* Economic unit which, under the auspices of a single proprietary or controlling body, engages in some type of activity relating to the extraction, exploitation and/or beneficiation of metallic or non-metallic minerals, whose centres of operation such as extraction zones, galleries, works and installations, are contiguous over a given geographic area (hill, mine, or quarry, for example). The mining unit may consist of (a) a mine; (b) the mine(s) and its/their beneficiation plant(s) and (c) a beneficiation plant alone, which may work with its own materials for those obtained from elsewhere.

*District of exploitation:* Economic unit engaged in activities of exploration, drilling and other tasks for the extraction of crude oil and natural gas, i.e. the set of wells, platforms and other types of installation forming a technical-operational unit in a given geographic area.

*Establishment:* Economic unit defined by fixed constructions and installations, permanently established in a single physical location, combining actions and resources under a single proprietary or controlling

body, for the purpose of producing goods, selling merchandise or providing services, whether or not for commercial purposes.

*Establishment as a homogeneous production unit:* Economic unit defined by considering each economic activity undertaken under the same proprietary or controlling body, in a single physical location, as an independent observation unit. This type of establishment is an analytical unit aimed at providing deeper understanding of the economic system.

*Pipeline transport firm:* Economic unit engaged in the transport and/or distribution of natural gas or petroleum products through pipelines. The unit may consist of one or several establishments operating under the same name, including offices, regulation and measuring stations, compression stations, and injection stations.

*Work centre:* Economic unit defined by fixed constructions and installations, permanently established in a single physical location, combining actions and resources under a single proprietary or controlling body, mainly for refining oil or obtaining petrochemical products.

*Federal firm-entity:* Economic unit encompassing all establishments or physical locations of a firm, located in a single federal entity of the country, for the main purpose of combining actions and resources in economic activities under a single proprietary or controlling body.

The main characteristic of the firms to which this observation unit applies is that they are present throughout national territory with global accounting records, and their data are important for regional and State planning.

*Operating agency:* Economic unit that administers and operates potable water, sewerage and sanitation systems and provides these services to the inhabitants of a municipality or federal entity. The organizational structure of such entities varies and includes water systems, directorates, commissions, local boards, departments and committees.

*Firm:* Institution or smallest combination of institutional units that encompasses and directly or indirectly controls the functions needed to carry out its production. The condition that the firm must satisfy is to depend on a single proprietary or controlling body. Nonetheless, it may be heterogeneous in terms of economic activities and location, and consist of several productive and/or auxiliary establishments.

*Transport company:* Economic unit that combines actions and resources under the auspices of a single proprietary or controlling body to provide transport services to the public, carrying people, merchandise or objects of any nature. The transport company may have one or several sites or physical locations within the same or different federal entities. It may be formed by a legally established company or by a group of individuals that join forces to operate a concession awarded collectively or individually.

*Bridge or booth (on a highway section):* Economic unit defined by fixed constructions and installations, permanently established in a single physical location, that combines actions and resources under a single proprietary or controlling body to allow the transit of vehicles or pedestrians (in the case of international bridges) on a highway section or bridge that it operates and/or manages, for which service it charges a fee or toll. This also includes auxiliary services provided to users.

*Integrated port administration:* Economic unit set up as a commercial company to which the federal government awards a concession for operating and providing port services. It is also empowered to make contracts for the partial assignment of concession rights to third parties to directly perform certain port services, such as piloting, towing, provisioning, fuel supply, elimination of waste water and handling services for the transfer of goods or merchandise.

Given the characteristics, nature, mobility and organizational forms with which the different economic activities operate, a decision has to be made as to the statistical units on which is practical, feasible and useful to capture data.

### *1.8 Economic classification*

The classification of economic activities has a broad tradition in Mexico, its most immediate forerunner being the Mexican Classification of Economic Activities that was designed and used for the first time in 1961. This classification system has undergone a number of revisions, leading to the Mexican Classification of Economic Activities and Products (CMAP) in 1981, which has itself been progressively updated as a result of economic censuses and is now in its fifth edition.

Construction of CMAP is based on the International Standard Industrial Classification of All Economic Activities (ISIC), recommended by the United Nations. Nonetheless, it also reflects the characteristics of Mexico's productive system so as to express the composition and key features of national production. In addition, by incorporating a list of products and services typical of each class of activity, it allows the classification system to be used in a uniform way.

In conceptual and methodological terms, CMAP can claim broad compatibility with the international recommendations issued by the United Nations Statistical Commission.

An economic activity classification system should be structured to allow any activity or group of activities to be located in it. Its organization and structure should be based on a conceptual principle that makes it easy both to operate and to interpret. The structure of the system is based on an organization of activities running from the general to the particular, and from the particular to the unique.

The classification system starts by recognizing primary (agricultural) activities; secondary (industrial) activities; and tertiary activities involving the provision of services or commerce. This gives it an analytical nature making it possible to group activities according to similar production processes, which in turn links them on the basis of the technical characteristics of each production process.

This procedure for structuring the economic activity classification system makes it possible to present the information at different levels of aggregation, thereby facilitating flexible data handling in accordance with the needs or interests of users. The Mexican Classification of Economic Activities and Products (CMAP) uses different levels of aggregation defined as follows: sector (one digit), subsector (2 digits), branch (4 digits), and activity class (six digits).

This systemic structure makes it easy to locate any activity or group of activities without having to scan the entire classification system, by targeting the search at a specific part.

The economic activities classification system has no duplications and ensures the existence of a code for each economic activity.

If the aim is to establish a classification system that generates highly homogeneous information, criteria must first be established for defining the code or class of activity corresponding to each economic unit. As these are economic units, it is natural to use the type of activity they are engaged in, with economic activity being understood as combining resources, via a procedure or set of tasks, to produce goods or to provide services.

Undertaking such activities adds value, either by transforming inputs into a good that has different characteristics between the start and finish of the activity, or else by providing a service whereby people achieve an objective (e.g. education, transport, entertainment), or their goods are improved (repaired, developed or cleaned, for example). In this way, the criterion that affords homogeneity of classification is the crystallization of human work and cumulative capital consumption (capital-good depreciation) reflecting new value that augments society's wealth.

When questioned about how they add value, however, many respondents will probably not know how to answer. Accordingly, income has to be used as an indirect indicator of value added, and therefore, as the main classification criterion in the 1999 economic censuses.

When the economic unit undertakes a single economic activity, there is no problem locating its activity code, since its activity (source of value-added) is reflected in the size of its incomes. But when two or more activities are performed, the main activity has to be determined (i.e. the one generating largest income). The others are then considered as secondary and the economic unit is classified according to its main activity.

When two economic activities produce equal incomes, the definition has to be based on the characteristics of the activities concerned; in other words, the proportionality of value-added, given the input-output ratio. Where there is a mix of commercial and service activities, the unit is classified as services; in a combination of commerce and manufacturing, it is classified as manufacturing, for example. Construction takes precedence over any other activity, given the characteristics of the sector (e.g. irregular incomes, part-time nature, seasonality, and sensitivity of the activity, type of observation unit).

There are other activities that do not perceive incomes, or where the activity depends on transfers, donations, or contributions by private individuals or an institutional sector. In such cases, the classification must be made according to the activity itself. Examples include museums, public-sector hospitals, research centres, social welfare and unions.

Lastly, there are activities which can only be understood in terms of incomes earned from a number of joint enterprises; examples include cinemas (where income from the sale of sweets equals or exceeds revenues from the sale of cinema tickets); automobile dealerships, which involve the sale of both new and used vehicles, together with trade in spare parts, and vehicle repair and maintenance services. These activities have to be considered jointly, because if the different components were presented separately, the size and composition of their incomes would behave differently. In the economic activity classification system, these are best identified by their generic name rather than by the peculiarities of each activity carried out.

The 1999 economic censuses generate information based on the CMAP classification; but precautions have also been taken to ensure that the data can be consulted under a new classification scheme, namely the

North American Industry Classification System (NAICS). This is a collaborative effort by the statistical offices of Canada, United States and Mexico, aimed at broadening the comparability of economic activities among the three partners of the North American Free Trade Agreement (NAFTA). It is unique among industrial classification systems in being based on a single conceptual framework: economic units using similar production processes are classified in the same activity class, and, wherever possible, classes are defined on the basis of differences in production processes. This supply-based or production-oriented economic concept allows input and output data to be available jointly and classified consistently. Examples of statistical uses of this type of data include the measurement of productivity, unit labour costs and the proportion of capital used in production; estimation of the employment-output ratio; construction of input-output tables, and other uses involving analysis of production ratios in the economy. The production concept used in NAICS will produce the data needed for such analyses.

In designing NAICS, special attention was given to developing production-oriented classifications for (a) new and emerging economic activities; (b) service activities in general; and (c) activities involved in the production of advanced technologies.

Using this methodology, the 1999 economic censuses, among other things, generate a directory of all economic units containing the basic characteristics of the establishment. These match those captured in the census schedule applied at the integer numeration stage and include:

- Identification of the establishment
- Location of the establishment
- Staff employed
- Type of organization
- Economic classification

## **2. Updating the directory**

Given the need for data sources from which to update the list of economic units during inter-census periods, an investigation was made of Mexican institutions that maintain company records for social, economic, development or revenue collection purposes. The search produced two agencies in which registration is compulsory —a crucial element for theoretically ensuring a directory is exhaustive. The viability of these institutions as alternate updating sources is analysed below, in terms of their consistency with the variables captured in the census exercise:

### *2.1 Registration with the Mexican Social Security Institute (IMSS)*

The Mexican Social Security Institute (IMSS) exists to provide health and social security services to Mexican workers and their families. All firms are legally required to be registered with the Institute and to periodically transfer workers' and employers' social security contributions to it. The corresponding records have the following characteristics:

#### Observation unit:

This is the establishment in manufacturing, construction, commerce, transport, communications and service industries; it is the same as used in the censuses.

**Geographic coverage:**

National; information is collected by state and then integrated regionally and for the whole country. Problems can be expected with the availability of integrated files in short periods.

**Classification criterion**

Activities are classified by job risk. There is a minimal classification by activity sector; but the records do contain a description of the activities carried out in each establishment, so it is feasible to locate it within the CMAP or NAICS system.

**Periodicity:**

Data are entered continuously.

**Variables captured:**

These include: name, location, employer record, economic activity and line of business; staff employed. Income data are not recorded.

**Compulsory nature:**

All establishments, regardless of their line of business, have to be registered with the IMSS; under-recording occurs, however, because of a tendency for firms to evade paying contributions.

*2.2 Registration with the Ministry of Finance and Public Credit (SHCP)*

The Ministry of Finance and Public Credit is responsible for collecting the taxes every firm is legally required to pay to the federal government. The Ministry records all start-ups and closures among the country's economic units. The characteristics of these records are as follows:

**Observation unit**

Private individuals or firms that carry out an activity identified in fiscal law; this unit is compatible with that used in the censuses.

**Geographic coverage:**

National; information is collected by state and integrated for the whole country. The integration of data to be used in updating the directory has to abide by the deadlines set by SHCP.

**Classification criterion:**

This registry uses a classifier that specifies the economic activity of the establishment. An equivalence has to be made between the fiscal classification and that used in censuses (CMAP or NAICS).

**Periodicity**

Time-frames for data entry depend on the fiscal regime in which each declaring unit is located. These periods define the intervals during which the directory can be updated.

**Variables captured:**

These include: name; federal taxpayer record; location; incomes. This covers all data needed to locate the establishment; no data are collected on staff employed.

**Compulsory nature:**

Every establishment, regardless of its line of business, has to be registered as active or withdrawn from ministerial records; nonetheless, under-recording occurs as a result of evasion, mainly among microenterprises.

### *2.3 Updating mechanisms*

These social security and fiscal records contain the elements needed to establish procedures for updating the directory obtained from censuses, at an acceptable level of quality.

It should be borne in mind that the initial list generated by the census project contains more establishments than those appearing in the registries mentioned above, because the censuses cover all establishments whether officially registered with those agencies or not. Below we present an alternative for dealing with establishments operating without registration.

Prior to updating, the directory obtained from the economic censuses needs to be divided into two large groups: registered and unregistered establishments. In addition, establishments included in the registries that do not appear in the census directory are also identified. The file is then purged to avoid duplication and ensure no establishment is left out. The employer and fiscal codes corresponding to each establishment in the registries consulted are then added to the resulting census directory.

#### *2.3.1 Registered establishments*

Establishments operating officially, i.e. those that are registered with IMSS and SHCP, are assigned the appropriate CMAP and NAICS economic activity codes. Once this has been done, the following update procedures are established:

##### *2.3.1.1 Initiation procedure*

Every three months the census list of officially operating establishments is compared with the social security and fiscal records. This identifies new establishments that have recently started economic activity. Special care is needed with establishments that appear as start-ups but actually represent a status change from unregistered to officially registered activity. In such cases, the establishment concerned must be removed from the unregistered directory.

##### *2.3.1.2 Removal procedure*

There are two different cases. The first involves automatic removal, which is recorded when a firm declares its economic activities to be at an end. The second case relates to establishments considered as potentially withdrawn, i.e. economic units which for nine months, or three updating periods, have not generated any activity in the records (i.e. they have not made social security contributions or paid the corresponding taxes). The status of these establishments is subject to verification in the field; and, where appropriate, definitive closure is reported to the corresponding fiscal and social security authorities, for them to take the necessary action.

#### *2.3.2 Unregistered establishments*

In the case of unregistered establishments, analysis of the data captured in the censuses provides the elements needed to design and undertake an annual survey to estimate the total number of establishments operating without registration, together with their main characteristics.

### **3. Final comments**

This combination of economic censuses with fiscal and social security administrative records makes it possible to compile an establishments directory and keep it permanently up-to-date.

Updating is carried out at the economic-unit level in the case of units operating with official registration, i.e. those carrying out activities that satisfy all the guidelines established by the different administrative agencies.

Non-official establishments, which are captured in economic censuses but not in administrative registries, are updated annually. This is not done individually but through a survey from which the number and basic characteristics of this group of establishments can be estimated. The directory of unregistered establishments is updated individually every five years.